IN THE CLAIMS:

1   1. (CURRENTLY AMENDED) A method for operating a node in a computer network,

2   the node connected to other nodes by links, comprising:

3   determining a path to a destination, the path including one or more links;

4   determining at least one alternate path having at least some of its one or more

5   links differing from the links of the path;

6   reserving bandwidth for said at least one alternate path by sending one or more

7   set-up request messages;

8   enabling said at least one alternate path at one or more other nodes along said at

9   least one alternate path, but not enabling said at least one alternate path at the node,

10   wherein the node is a head node of said at least one alternate path;

11   subsequent to reserving bandwidth and enabling, detecting a link failure on the

12   path; and

13   rerouting traffic on said at least one alternate path in case of a link failure by ena-

14   bling said at least one alternate path in the node, and absent sending any additional set-up

15   messages to the one or more other nodes along said at least one alternate path.

1   2. (CURRENTLY AMENDED) The~~A~~ method as in claim 1, further comprising:

2   periodically updating said at least one alternate path.

1   3. (CURRENTLY AMENDED) The~~A~~ method as in claim 1, further comprising:

2   determining a plurality of alternate paths for the path, and said plurality of alter-

3   nate paths do not have any link in common.

1   4. (CURRENTLY AMENDED) The~~A~~ method as in claim 1, further comprising:

2   rerouting user traffic substantially simultaneously to each link of said at least one

3   alternate path.

1   5. (CURRENTLY AMENDED) The~~A~~ method as in claim 1, further comprising:

2   reserving bandwidth on said at least one alternate path for switching real-time

3   connections first.

1   6. (CURRENTLY AMENDED) A node in a computer network connected by links, said

2   node comprising:

3   means for determining a path to a destination, the path including one or more

4   links;

5   means for determining at least one alternate path having at least some of its one or

6   more links differing from the links of the path;

7   means for reserving bandwidth for said at least one alternate path prior to detect-

8   ing a link failure on the path by sending one or more set-up request messages;

9   means for enabling said at least one alternate path at one or more other nodes

10   along said at least one alternate path, but not enabling said at least one alternate path at

11   the node, wherein the node is a head node of said at least one alternate path; and

12   means for rerouting traffic on said at least one alternate path in case of a link fail-

13   ure by enabling said at least one alternate path in the node, and absent sending any addi-

14   tional set-up messages to the one or more other nodes along said at least one alternate

15   path.

1   7. (CURRENTLY AMENDED) The~~A~~ node as in claim 6, further comprising:

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2   means for periodically updating said at least one alternate path.

1   8. (CURRENTLY AMENDED) The~~A~~ node as in claim 6, further comprising:

2   means for determining a plurality of alternate paths for the path, and said plurality

3   of alternate paths do not have any link in common.

1   9. (CURRENTLY AMENDED) The~~A~~ node as in claim 6, further comprising:

2   means for rerouting user traffic substantially simultaneously to each link of said at

3   least one alternate path.

1   10. (CURRENTLY AMENDED) The~~A~~ node as in claim 6, further comprising:

2   means for reserving bandwidth on said at least one alternate path for switching

3   real-time connections first.

1   11. (CURRENTLY AMENDED) A node in a computer network connected by links, said

2   node comprising:

3   a transit connection manager (TCM) adapted to

4   set up transit connections for a path,

5   update routing tables,

6   route traffic; and

7   an alternate path manager adapted to

8   determine at least one alternate path for use in case of failure of a

9   link of the path,

4

10   allocate connections on said at least one alternate path prior to a link fail-

11 ure on the path,

12   reserve bandwidth on said at least one alternate path prior to a link failure

13 on the path by sending one or more set-up request messages,

14   cause one or more other nodes along said at least one alternate path to en-

15 able said at least one alternate path,

16   cause the node to not enable said at least one alternate path, wherein the

17 node is a head node of said at least one alternate path.

18   request to said TCM the rerouting of traffic on said at least one alternate

19 path in case of a link failure by enabling said at least one alternate path in the

20 node, and absent sending any additional set-up messages to said one or more other

21 nodes along said at least one alternate path.

1   12. (PREVIOUSLY PRESENTED) The node according to claim 11, further comprising:

2   said at least one alternate path is a plurality of alternate paths that each include

3   one or more links and the plurality of alternate paths do not have any link in common.

1   13. (PREVIOUSLY PRESENTED) The node according to claim 11, further comprising:

2   said alternate path manager adapted to reroute user traffic to each link of said at

3   least one alternate path.

1   14. (PREVIOUSLY PRESENTED) The node according to claim 11, further comprising:

2   said alternate path manager adapted to reserve bandwidth on said at least one al-

3   ternate path for making real-time connections first.

15-16. (CANCELLED)

17. (CURRENTLY AMENDED) A method of non-disruptive packet switching in a network having nodes interconnected with transmission trunks, said method comprising:

pre-selecting at least on alternate path for each trunk;

reserving connections at each node to make said at least one alternate path;

reserving bandwidth resources to transmit packets on said at least one alternate path by sending one or more set-up request messages;

enabling said at least one alternate path at one or more nodes along said at least one alternate path, but not enabling said at least one alternate path at a head node of said at least one alternate path;

subsequent to the reserving connections and reserving resources and enabling, detecting a failure of a particular trunk; and

switching the path of a packet from said particular trunk, in response to failure of said particular trunk, to said at least one alternate path by enabling said at least one alternate path in the head node, and absent sending any additional set-up messages to said one or more nodes along said at least one alternate path.

18. (PREVIOUSLY PRESENTED) The method according to claim 17 further comprising:

said at least one pre-selected alternate path is a plurality of alternate paths that each include one or more trunks, and the plurality of paths do not have any trunk in common.

1   19. (PREVIOUSLY PRESENTED) The method according to claim 17 further compris-

2   ing:

3   rerouting user traffic to each trunk of said at least one alternate path.

1   20. (PREVIOUSLY PRESENTED) The method according to claim 17 further compris-

2   ing:

3   reserving resources on said at least one alternate path for making a real-time con-

4   nection first.

1   21-41. (CANCELLED)

1   42. (PREVIOUSLY PRESENTED) The method as in claim 1, further comprising:

2   sending one or more set-up request messages to one or more nodes associated

3   with each of the one or more alternate paths, to allocate a connection along each of the

4   one or more alternate paths;

5   maintaining the connection along each of the one or more alternate paths in a

6   standby mode; and

7   in response to a link failure on the path, activating the connection along at least

8   one of the one or more alternate paths.

1   43. (CANCELLED)

1   44. (PREVIOUSLY PRESENTED) The node as in claim 11, wherein the TCM is con-

2   figured to allocate connections by transmission of one or more set-up request messages to

3   one or more nodes associated with each of the one or more alternate paths, to maintain a

4   connection along each of the one or more alternate paths in a standby mode, and to acti-

5   vate the connection along at least one of the one or more alternate paths in response to a

6   link failure.

1   45. (PREVIOUSLY PRESENTED) A method comprising:

2   determining a path to a destination, the path including one or more links;

3   determining at least one alternate path having at least some of its one or more

4   links differing from the links of the path;

5   sending one or more set-up request messages along the at least one alternate path

6   to request one or more nodes along the path reserve resources for, and enable, the at least

7   one alternate path;

8   reserving resources for, but not enabling, the at least one alternate path at a head

9   node of the at least one alternate path;

10   subsequent to steps of sending and reserving, detecting a link failure on the path;

11   and

12   rerouting traffic on the at least one alternate path in case of a link failure by ena-

13   bling the at least one alternate path in the head node, absent sending additional set-up

14   messages to one or more nodes along the at least one alternate path.

1   46. (PREVIOUSLY PRESENTED) The method as in claim 45 wherein the resources in-

2   clude bandwidth for passing traffic, and the one or more set-up request messages request

3   the one or more nodes reserve bandwidth for the alternate path.

1   47. (PREVIOUSLY PRESENTED) The method as in claim 45 further comprising:

2   periodically updating the at least one alternate path in response to changes in

3   available bandwidth.

1   48. (PREVIOUSLY PRESENTED) The method as in claim 45 wherein the least one al-

2   ternate path is a plurality of alternate paths that do not have any links in common.

1   49. (NEW) An apparatus comprising:

2   a plurality of ports;

3   a route controller configured to determine a path to a destination via one of the

4   plurality of ports, the path including one or more links; and

5   an alternate path manager (AMP) configured to,

6   determine at least one alternate path via one of the plurality of ports, the at

7   least one alternate path having at least some links that differ from the links of the

8   path,

9   send one or more set-up request messages along the at least one alternate

10   path to request one or more nodes along the path reserve resources for, and en-

11   able, the at least one alternate path,

12   reserve resources for, but not enable, the at least one alternate path at the

13   apparatus, wherein the apparatus is a head of the at least one alternate path;

14   detect a link failure on the path, and

15   reroute traffic on the at least one alternate path in case of a link failure by

16   enabling the at least one alternate path in the apparatus, absent a send of addi-

17   tional set-up messages to one or more nodes along the at least one alternate path.

1   50. (NEW) The apparatus as in claim 49 wherein the resources include bandwidth for

2   passing traffic, and the one or more set-up request messages request the one or more

3   nodes reserve bandwidth for the alternate path.

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1   51. (NEW) The apparatus of claim 49 wherein the AMP is further configured to periodi-

2   cally update the at least one alternate path in response to changes in available bandwidth.

1   52. (NEW) The apparatus of claim 49 wherein the least one alternate path is a plurality of

2   alternate paths that do not have any links in common.

1   53. (NEW) An apparatus comprising:

2   means for determining a path to a destination, the path including one or more

3   links;

4   means for determining at least one alternate path, the at least one alternate path

5   having at least some links that differ from the links of the path;

6   means for sending one or more set-up request messages along the at least one al-

7   ternate path to request one or more nodes along the path reserve resources for, and en-

8   able, the at least one alternate path;

9   means for reserving resources for, but not enabling, the at least one alternate path

10   at the apparatus, wherein the apparatus is a head of the at least one alternate path;

11   means for detecting a link failure on the path; and

12   means for rerouting traffic on the at least one alternate path in case of a link fail-

13   ure by enabling the at least one alternate path in the apparatus, absent sending additional

14   set-up messages to one or more nodes along the at least one alternate path.